Department of Ecology

Nutrients / Pathogens – Follow Up Wastewater Treatment Plants – Long term Action Plan

March 20, 2007

Is there an alternative approach that would result in more rapid upgrades to existing sewage treatment plants to reduce nitrogen loading to Puget Sound?

Ecology's current approach to reduce loading from Sewage Treatment Plants (STPs):

- Conduct technical studies on pollution sources and effects
- Determine appropriate reductions for each pollution source
- Incorporate results in watershed plan or Total Maximum Daily Load (TMDL)
- Reissue waste discharge (NPDES) permits with revised effluent limits
- STPs revise facility plans, obtain funding and rebuild

Sewers: Alternative approaches to improve dissolved oxygen levels in Puget Sound

Action	When	Cost
1. Determine how much nitrogen can be discharged while protecting dissolved oxygen levels		
Ecology completes South Puget Sound Study (in progress) Issue permits with new nitrogen limits; upgrade treatment plants if necessary	2010 2015-2025	$2 million* 0.6-2 billion?
Ecology completes studies of nitrogen sources in other parts of Puget Sound Issue permits with new nitrogen limits; upgrade treatment plants if necessary	2015 2020-2030	$5 million 3.4 billion?
2. OR: Pass legislation in 2008 requiring wastewater discharges to meet specific discharge standard		
Ecology issues permits with new nitrogen and other limits to help dissolved oxygen Local governments upgrade treatment plants	2010 2020	Current level 5.4 billion?
3. OR: Require state of art nutrient reduction as "All Known Available and Reasonable Treatment"		
Ecology completes technical & economic analysis, rule making Issue permits with new nitrogen limits; upgrade treatment plants if necessary	2010 2015-2025	$0.9 million 5.4 billion?
4. OR: Cap total amount of nitrogen allowed into Puget Sound And allow dischargers to Trade credits		
Ecology completes studies of human & natural nitrogen sources to Puget Sound Ecology completes technical & some economic analysis, rule making to cap nitrogen Local governments negotiate pollution trading, including nonpoint source reduction and shorter timeframe for combined sewer overflow corrections Issue permits with new nitrogen limits; upgrade treatment plants if necessary	2015 2018 2020-2030	$7 million* $0.9 million ? <5.4 billion?
Also: Ecology & CTED provide financial & technical assistance for nutrient removal & water re-use		

*South Puget Sound Study: $1 million funded through 6/30/07; <$500 K in Governor's budget for FY 07-09; ~$500 K funding gap

Sewers: Alternative approaches to improve dissolved oxygen levels in Puget Sound

Action	When
Determine how much nitrogen can be discharged while protecting dissolved oxygen levels	
1. Ecology completes South Puget Sound Study and modeling. Model predicts impact of 30 wastewater treatment plants on dissolved oxygen in South Puget Sound	2010
2. In partnership with EPA, Puget Sound Partnership & other organizations, Ecology completes technical & economic analysis of All Known Available & Reasonable Treatment (AKART) options for nitrogen removal from marine dischargers.	2010
3. Ecology runs AKART scenarios through model to predict impacts on dissolved oxygen. With Puget Sound Partnership, Ecology makes a decision regarding AKART requirements for marine dischargers.	2011
4. If decide to require AKART, adopt new treatment requirement by rule.	2012
5. Reissue all Puget Sound municipal NPDES permits with compliance schedules to meet new requirements	2013+